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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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05/23/2000

Kia Silverbrook

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24011

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05/26/2004

SILVERBROOK RESEARCH PTY LTD
393 DARLING STREET
BALMAIN, 2041
AUSTRALIA

EXAMINER

HESELTIME, RYAN J

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 05/26/2004

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/575,171

Applicant(s)

SILVERBROOK ET AL.

Examiner

Ryan J Hesseltine

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-38, 40-69 and 71-81 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-38, 40-69 and 71-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 16, 2004 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 33, and 65 have been considered but are moot in view of the new ground(s) of rejection.
3. The rejection of claims 7, 39, and 70 is rendered moot by applicant's cancellation of those claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 11, 33, 34, 43, 65, 66, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekendur (USPN 5,852,434, cited on applicant's IDS) in view of Patel (USPN 5,857,029, previously cited) in view of Khan et al. (USPN 6,401,206, newly cited), hereafter Khan.

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6. Regarding claims 1, 33, and 65, Sekendur discloses a system and method of enabling user interaction with computer software running in a computer system (column 5, line 1-14) via: an interface surface displaying information relating to the computer software, the interface surface having coded data (plurality of dots) disposed thereon (column 5, line 22-30), wherein all of the coded data is indicative of its own position (X-Y coordinates) relative to the interface surface (column 5, line 1-5 and 47-50); and a sensing device (stylus; Figure 6; column 5, line 63-column 6, line 11) which, when placed in an operative position relative to the interface surface, senses at least some of the coded data and generates indicating data using at least some of the sensed coded data (column 6, line 46-50), and generates movement data (column 2, line 44-47) indicative of the sensing device's movement (path; column 5, line 40-45); the method including the steps of, in the computer system: (a) receiving the indicating data from the sensing device (column 5, line 5-14); (b) receiving the movement data from the sensing device (column 5, line 42-45); (c) identifying the writing surface on the basis of the indicating data (column 5, line 40-42); and (e) operating the computer software at least partly in reliance on the movement data (column 6, line 46-50), and in accordance with instructions associated with writing surface (column 5, line 51-62).

7. Sekendur discloses that the movement data indicative of the sensing device's movement can be used for signature verification (column 3, line 38-39), but does not disclose that the interface surface includes a visible signature region corresponding to a signature field. Sekendur discloses that the coded data is disposed over the entire interface surface (Figure 1 and 3; column 5, line 22-30) such that if a visible signature region were defined, the coded data would be disposed both inside and outside the signature region and the coded data located inside the

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signature region would be further indicative of the signature field. Patel discloses a method and apparatus for non-contact signature imaging including a portable, hand-held apparatus for capturing a gray scale image of a signature within a box (region/field) having fiducial marks in the corners (Figure 2; column 4, line 63-column 5, line 4). Patel discloses that the fiducial marks (coded data 75a-75d) are in the corners of the signature box (Figure 2), and it appears that the marks lie outside of the box, but it is obvious that the marks could also be provided at the corners within the boundaries of the signature box. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a visible signature region corresponding to a signature field on the interface surface as taught by Patel in order to successfully locate the signature for trimming excess image areas and mapping the signature to an image of standard size and shape (column 4, line 63-column 5, line 25).

8. Both Sekendur and Patel disclose that the data may be digitized, but neither discloses generating, in the computer system and using a signature key of the user that is a private key, a digital signature of digital content related to the computer software. Khan discloses a method and apparatus for binding electronic impressions made by digital identities to documents including electronic representations of handwritten signatures, seals, stamps, fingerprints, photographic images, and other biometric information (column 6, line 59-67) wherein a digital signature of digital content related to the computer software is generated in the computer system using a private signature key of the user (column 7, line 1-12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to generate a digital signature using a private signature key of the user as taught by Khan in order to electronically sign a

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document with the digital identity of the signer, which is created only once and stored after encryption to prevent unauthorized usage (column 4, line 45-62).

9. Regarding claims 2, 34, and 66, Sekendur discloses that the system and method includes verifying that the movement data represents a handwritten signature of the user (column 3, line 38-39).

10. Regarding claims 11, 43, and 71, Patel discloses that the digital signature (column 4, line 38-46) is associated with the signature field (column 4, line 63-column 5, line 12).

11. Claims 3-6, 12, 13, 25-27, 29, 30, 35-38, 44, 45, 57-59, 61, 62, 67-69, 72 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekendur in view of Patel in view of Khan as applied to claims 1, 33, and 65 above, and further in view of Marshall (USPN 5,774,571, previously cited).

12. Regarding claims 3 and 35, Sekendur discloses that the movement data can be used for signature verification, but does not explicitly disclose that the user is identified in this manner. Marshall discloses a writing instrument with multiple sensors for biometric verification wherein the user is identified (column 7, line 31-36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to identify the user as taught by Marshall in order to verify that the person writing the signature with the writing instrument is the correct person (column 7, line 31-36).

13. Regarding claims 4, 36, and 67, Marshall discloses that identifying the user includes using the movement data (column 7, line 28-36).

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14. Regarding claims 5, 37, and 68, Marshall discloses that the system and method are configured to receive data indicative of the identity of the user (column 7, line 60-65).

15. Regarding claims 6, 38, and 69, Marshall discloses that the system and method are configured to receive data from storage means (sub-memory means) of the sensing device, the data being indicative of the identity of the user (column 6, line 55-61; column 7, line 60-65).

16. Regarding claims 12 and 44, Patel discloses that the computer system is configured to send data to the computer software indicative of at least the signature field (column 5, line 7-17).

17. Regarding claims 13, 45, and 72, Patel discloses that the signature field is associated with a visible signature zone (Figure 2) defined on the interface surface (column 4, line 63-column 5, line 4).

18. Regarding claims 25, 57, and 78, Sekendur discloses that the coded data includes at least one tag, each tag being indicative of the signature field (Figure 3; column 5, line 40-45; see above discussion of claims 1, 33, and 65 with respect to Patel).

19. Regarding claims 26 and 58, Sekendur discloses that the tags are also indicative of points within the signature field (Figure 3; column 5, line 40-45; see above discussion of claims 1, 33, and 65 with respect to Patel).

20. Regarding claims 27 and 59, Sekendur discloses that each of the tags includes: first identity data defining a relative position (coordinates) of that tag; and second identity data identifying the signature field (Figure 3; column 5, line 40-45; see above discussion of claims 1, 33, and 65 with respect to Patel).

21. Regarding claims 29 and 61, Sekendur does not explicitly disclose that the relative position is defined in relation to a plurality of the other tags, but does disclose that triangulation

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may be used to determine the path of the stylus, which requires using a plurality of points, or tags (column 5, line 40-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to define the relative position in relation to a plurality of tags as taught by Sekendur in order to determine the path of the stylus without using absolute positioning (column 5, line 40-45).

22. Regarding claims 30 and 62, Sekendur discloses the relative position is defined in relation to the interface surface (column 5, line 22-30).

23. Claims 8-10 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekendur in view of Patel in view of Khan as applied to claims 1 and 33 above, and further in view of Zank et al. (USPN 6,307,955, previously cited), hereafter Zank.

24. Regarding claims 8 and 40, Sekendur does not disclose generating a digital signature by encrypting the signature using a fixed-length hash. Zank discloses an electronic signature management system that is configured to generate a hash (column 6, line 55-58) based on the digital content (column 6, line 26-31) and to encrypt the hash in accordance with the signature key after the signature has been verified (column 7, line 26-29), thereby to generate the digital signature (column 7, line 45-50). Zank does not explicitly disclose that the hash is of fixed length, but it would have been obvious to make the hash of fixed length in order to standardize the encryption step. It would have been obvious to one of ordinary skill in the art at the time the invention was made to generate a digital signature as taught by Zank in order to allow a user to verify an electronic document (column 7, line 51-59).

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25. Regarding claims 9 and 41, Zank discloses that the digital content is provided by the user (column 8, line 44-50).

26. Regarding claims 10 and 42, Zank discloses that the digital content is based on data input by the user via the sensing device and interface surface (column 8, line 44-50).

27. Claims 28 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekendur in view of Patel in view of Khan in view of Marshall as applied to claims 27 and 59 above, and further in view of Zank.

28. Regarding claims 28 and 60, Sekendur does not disclose that the relative position is defined in relation to the signature field. Zank discloses that x- and y-axis data can be absolute, relative, or incremental, where relative is with respect to a starting point of a signature (column 5, line 66-column 6, line 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to define the relative position in relation to the signature field as taught by Zank in order to store respective sets of the coordinates in sequential order as an electronic signature while preserving a time relation between coordinates, forming a time-history of the stylus (column 2, line 16-29).

29. Claims 14-19, 21, 22, 46-51, 53, 54, and 73-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekendur in view of Patel in view of Khan in view of Marshall as applied to claims 1-6, 33-38, and 65-67 above, and further in view of Wolff et al. (GB 2,306,669, cited on applicant's IDS), hereafter Wolff.

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30. Regarding claims 14, 46, and 73, Sekendur, Patel, and Marshall do not explicitly disclose that the sensing device includes at least one acceleration-measuring device. Wolff discloses a manual entry interactive paper and electronic document handling and processing system wherein the sensing device includes at least one acceleration measuring device for measuring acceleration of the sensing device as it is used to sign the signature onto the surface (page 17, line 13-22), the movement data being generated by periodically sampling the acceleration of the sensing device as it is used to sign the signature onto the surface (page 21, line 4-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include at least one acceleration-measuring device in the sensing device as taught by Wolff in order to obtain movement data of the sensing device in the form of acceleration signals (page 17, line 8-12).

31. Regarding claims 15 and 47, Wolff discloses that the system and method further includes the step of generating movement data in the form of a locus of the sensing means in relation to the surface (page 13, line 13-21), the locus being determined by ascertaining relative displacement (position) of the sensing device (page 17, line 20-22).

32. Regarding claims 16, 48, and 74, Wolff discloses that the relative displacement is obtained by doubly integrating the acceleration with respect to time (page 18, line 1-2).

33. Regarding claims 17, 49, and 75, Wolff discloses that the acceleration-measuring device includes one or more accelerometers (page 18, line 1-2) configured to measure at least two orthogonal components (two of three attitude planes) of acceleration (page 17, line 16-18).

34. Regarding claims 18 and 50, Wolff discloses that position elements are disposed on the interface surface (pre-printed marks), the sensing device being configured to periodically sense position elements as it is used to draw onto the surface (page 22, line 5-7), including the step of

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generating the movement data by ascertaining relative displacement of the sensing means over time with respect to at least one of the position elements (page 18, line 2-7).

35. Regarding claim 76, Wolff discloses that the position elements are disposed on the interface surface, the sensing device being configured to periodically sense position elements as it is used to sign the signature onto the surface, the movement data being generated in the form of a locus of the sensing means in relation to the surface by ascertaining relative displacement of the sensing means with respect to at least one of the position elements (see discussion of claims 15, 18, 47, and 50 above).

36. Regarding claims 19 and 51, Sekendur discloses that the position elements are disposed on the surface as a regular array of dots, lines or other formations (figure 1, element 2; column 5, line 1-5).

37. Regarding claims 21, 53, and 77, Sekendur does not disclose that the movement data is generated using one or more motion sensing elements rotatably mounted to the sensing device. Wolff discloses that the movement data is generated by ascertaining relative rotation of one or more motion sensing elements (gyroscopes) rotatably mounted to the sensing device for contact with the surface while the sensing device is used to sign the signature thereon (page 17, line 13-22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to generate movement data using one or more rotatably mounted motion sensors as taught by Wolff in order to determine the motion and relative position of the sensing device in two of three attitude planes based on the measured angular velocity (page 17, line 16-18).

38. Regarding claims 22 and 54, Sekendur does not disclose that the motion sensing elements include one or more rollerballs. Marshall discloses that the motion sensing elements include one

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or more rollerballs (figures 8 and 9, elements 46) mounted for rotation within a constraining housing disposed substantially within the sensing device (column 11, line 24-28). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use rollerballs as the motion sensing elements as taught by Marshall in order to enable a totally free standing writing instrument to execute its own direction calculations (column 11, line 30-40).

39. Regarding claim 78, see discussion of claims 25 and 57 above.

40. Regarding claim 79, see discussion of claims 26 and 58 above.

41. Regarding claim 80, see discussion of claims 27 and 59 above.

42. Claims 20 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekendur in view of Patel in view of Khan in view of Marshall in view of Wolff as applied to claims 18 and 50 above, and further in view of Dymetman et al. (USPN 6,330,976, previously cited), hereafter Dymetman.

43. Regarding claims 20 and 52, Sekendur does not disclose that the position elements are disposed on the surface stochastically. Dymetman discloses a marking medium area with encoded identifier for producing action through network including a coded substrate (column 8, line 55-67) wherein the visible or invisible markings are disposed (created) stochastically using a random number generator (column 32, line 54-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to stochastically dispose the position elements on the surface as taught by Dymetman in order to increase the security of a document by randomly mapping functions as a secret property of the coded substrate rather than simply encoding a page-id number (column 32, line 49-58).

44. Claims 23, 24, 55, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekendur in view of Patel in view of Khan in view of Marshall in view of Wolff as applied to claims 22 and 54 above, and further in view of Chang (USPN 5,298,919, previously cited).

45. Regarding claims 23 and 55, Marshall does not explicitly disclose that components of rotation of the roller ball are periodically measured. Chang discloses a multi-dimensional input device including roller balls (column 4, line 38-41) and sensors which sample and measure movement of the roller balls (column 4, line 60-63) at a fixed frequency (column 7, line 16-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to periodically measure the components of rotation of the roller balls as taught by Chang in order to synchronize the measurements with the system computer (column 7, line 23-32).

46. Regarding claims 24 and 56, Marshall discloses that the components of rotation of the roller ball due to movement of the sensing device by the user when signing the signature onto the surface are measured by means of: rollers (electrical contacts or sensors) disposed within the constraining housing for rotation, the rollers (sensors) being configured to be driven by contact with the rotating roller ball (column 11, line 24-27). Chang discloses that the components of rotation of the roller ball may be measured by means of optical sensing of rotation of the roller ball with respect to the constraining housing (column 4, line 65-68).

47. Claims 31, 32, 63 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekendur in view of Patel in view of Khan in view of Marshall as applied to claims 27, 31, 59 and 61 above, and further in view of Dymetman.

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48. Regarding claims 31 and 64, Sekendur does not disclose that the first identity data identifies stored information defining the relative position, the stored information not being stored on the interface surface. Dymetman discloses a marking medium area with encoded identifier for producing action through network including first identity data that identifies stored information defining the relative position (locations or zones within the substrate) (column 8, line 63-67), the stored information not being stored on the interface surface (first identifier includes a second identifier accessible by table or other data structure) (column 7, line 29-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to identify information not stored on the interface surface using the first identity data as taught by Dymetman in order to provide additional information related to the first identity data (column 3, line 57-67).

49. Regarding claims 32 and 64, Dymetman discloses that the first identity data and the second identity data together identify stored information defining the relative position (column 7, line 29-35).

Conclusion

50. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- USPN 5,199,081 to Saito et al. discloses a system for recording an image having a facial image and ID information including a handwritten signature.
- USPN 5,647,017 to Smithies et al. discloses a method and system for the verification of handwritten signatures wherein the signature is encoded using a secret key.
- USPN 5,680,460 to Tomko et al. discloses biometric controlled key generation.

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- USPN 5,748,809 to Hirsch discloses active area identification on a machine-readable form using form landmarks including a field such as a signature box.
- USPN 6,081,610 to Dwork et al. discloses a system and method for verifying signatures on documents generated using a secret key including a private key.
- USPN 6,408,330 to DeLaHueraga discloses a remote data collecting and address providing method and apparatus including a public/private digital security key.
- USPN 6,704,906 to Yankovich discloses a self-directed routable electronic form system and method including signature/approval form fields in the E-form.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan J Hesseltine whose telephone number is 703-306-4069.

The examiner can normally be reached on Monday - Friday, 8:30 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan J. Hesseltine
May 20, 2004


JINGGE WU
PRIMARY EXAMINER